Family Stromateidae

Body deeply ovate, strongly compressed. Head more or less obtuse, moderate. Eye moderate. Mouth small. Dentition feeble, palate toothless. Nostrils 2 on each side, nearer snout end than eye. Preopercle entire with age. Gill membranes free from isthmus, rarely connected. Gills 4, slit after fourth. Pseudobranchiae present, often rudimentary. Branchiostegals 5 to 7. Lower pharyngeals united. Air bladder present or absent. Oesophagus with lateral sacs, which toothed internally. Vertebrae 30 & 36. Scales small or moderate, extend on vertical fins, usually thin, deciduous, cycloid. Lateral line

Serenus Jaru

continuous., scales with short, wide, straight tube. dorsal fin long, with few weak spines, often obsolete. Anal usually with 3 spines, soft fin sometimes long as soft dorsal. Caudal forked. Pectoral bones attached, not firmly joined to pectoral arch. Ventral behind pectoral, with spine and 5 rays, present only in young, obsolete or absent with age.

Genera few. Marine fishes, mostly valued as food.

Analysis of Genera

a.' Stromateinae. Gill membranes not united to isthmus. Stromateus.

a.² Pampinae. Gill membranes widely joined to isthmus. Pampus.

Genus Stromateus Linnaeus

Stromateus Linnaeus, Syst. Nat., ed. 10, pt. 1, (1758) p. 248, (Type fiatola Linnaeus, designated by Gill, Proc. Acad. Nat. Sci. Philadelphia, (1862) p. 126,

Chrysostromus Lacépède, Hist. Nat. Poiss., vol. 4, (1802) p. 697, (Type Chrysostromus fiatoloides Lacépède = Stromateus fiatola Linnaeus, monotypic.

Lepterus Rafinesque, Carat. Nuov. Anim. Sicilia, April 1, (1810) p. 52, (Type Lepterus fetula Rafinesque = Stromateus fiatola Linnaeus, monotypic.

Lepipterus Rafinesque, Analyse de la Nature, (1815) p. 85, Atypic. (Type Stromateus fiatola Linnaeus, evidently, as Lepipterus expanded emendation for Lepterus.)

Clarnley Island.

Depth 3 1/4 to 3 2/5; head 2 7/8 to 3 2/5, width 2 1/10 to 2 1/8. Snout 3 to 3 1/8 in head; eye 3 1/8 to 3 2/5, 1 1/5 to 1 1/4 in snout, equals interorbital; maxillary reaches opposite front eye edge, expansion 3 in eye, length 2 7/8 to 3 in head; interorbital 3 2/3 to 3 3/4 broadly and but little convex. Gill rakers 4+8, short points, 1/2 of gill filaments, which 2 2/5 in eye.

Scales 43 to 45 in lateral line to caudal base and 4 or 5 more on latter; 7 above, 10 below, 22 predorsal forward opposite front eye edge premaxillary groove broadly naked; 3 rows on cheek to preopercle ridge. Scales with 4 or 5 basal radiating striae; basal circuli as fine parallel transverse striae.

D. IX, 10, I, second spine 1 3/4 to 2 in

Fiatola Cuvier, Règne Animal, vol. 2., (1817) p. 342, (Type Stromateus fiatola Linnaeus, tautotypic.)

Pterorhombus Fowler, Proc. Acad. Nat. Sci. Philadelphia, (1906) p. 118, (Type Fiatola fasciatus Risso, orthotypic.)

Gerres gigas Günther, Cat. Fishes Brit. Mus., vol. 4, 1862, p. 262. Tonga Islands. 1/m Castelnau, Proc. Zool. Acclimat. Soc. Victoria, vol. 2, 1873, p. 117 (Nouméa, New Caledonia). 1/m Günther, Journ. Mus. Godeffroy, vols. 2-3, pts. 5-6, 1874, p. 30, pl. 24, fig. A (Friendly Islands; Fiji). 1/m Macleay, Proc. Linn. Soc. New South Wales, 1882, p. 239 (New Guinea). 1/m Boulenger, Ann. Mag. Nat. Hist. London, series 6, vol. 20, 1897, p. 372 (Rotuma). 1/m Fowler, Bull. Bishop Mus., vol. 22, 1925, p. 10 (Guam); new. Bishop Mus., vol. 10, 1928, p. 226 (Guam, Tongatabu, Fiji, Samoa, Apia). Gerres macrostoma (not Bleeker) Kner, Sitzs. Ber. Akad. Wiss. Wien, math.-naturw. Klasse, vol. 58, 1868, p. 301. Gerres carinatus Alleyne and Macleay, Proc. Linn. Soc. New South Wales, vol. 1, 1876 (February 1877), p. 273, pl. 7, fig. 4.

Body greatly compressed, ovate, deep or elevated. Head robust, compressed. Snout obtuse. Eye advanced in head. Mouth small, rather wide. Maxillary exposed. Single series of minute teeth in jaws, palate and tongue entire. Nostrils small, together. Opercular bones entire or minutely denticulate. Gill membranes united, free from isthmus. Gill rakers lanceolate. Pseudobranchiae present. Branchiostegals 5 to 7. Vertebrae 46. Oesophagus armed with numerous body barbed teeth. No air bladder. Pyloric coeca very numerous. Body covered with very small scales. Single long dorsal, spines 3 to 9, rays 40 to 48, spines feeble, graduated. Anal long, with 3 rudimentary spines and 32 to 40

rays. Caudal forked. Pectoral rays 22. Ventral thoracic, disappear with age, pelvis not projecting at spine.

Analysis of Species

a.' Pterorhombus. Caudal lobes long as head.

b.' Depth 2. fasciatus.

b.² Depth 2 1/2. maculatus.

a.² Stromateus. Caudal lobes elongate, much longer than head; depth 2 to 2 1/3. fiatola.

Mullus porosus Ogilby, Edible Fishes New South Wales, 1893, p. 33. 1/m Waite, Sea Fisher. Rep. Thetis, 1898, p. 25 (New South Wales).

Upeneichthys vlamingii (not Cuvier) Hector, Trans. New Zealand Institute, vol. 9, 1877, p. 465, pl. 9, fig. 5.

Upeneus vlamingii Castelnau, Proc. Linn. Soc. New South Wales, vol. 3, 1879, p. 372 (Port Jackson).

Stromateus fasciatus (Risso)

Fiatola fasciata Risso, Hist. Nat. Eur. Mérid., vol. 3, p. 289, 1826 (type locality, Nice).

Stromateus fasciata Fowler, Proc. Acad. Nat. Sci. Philadelphia, p. 118, March 1906 (Italy).

Vesperus randeletii Cuvier, Règne Animal, vol. 2, p. 214, 1829 (type locality, Mediterranean (on Vesperus Randelet, Pisc. Marin., vol. 9, cap. 20, p. 257, 1554);

— Valenciennes, Règne Animal Cuvier, ed. ill., Poiss., pl. 63, fig. 3, 1839.

Amia nigripinnis (Cuvier)

Apogon nigripinnis Cuvier, Hist. Nat. Poiss., vol. 2, 1828, p. 152. (Java and Pondicherry. — Günther, Cat. Fishes Brit. Mus., vol. 1, 1859, p. 235 (China and East Indies). — Playfair, Fishes of Zanzibar, 1866, p. 20 (Zanzibar). — Günther, Journ. Mus. Godeffroy, vol. 1, pt. 1, 1873, p. 21 (Bonin Islands). — Day, Fishes of India, pt. 1, 1875, p. 60, pl. 16, fig. 6 (type; Madras). — Károli, Termesz. Füzetek, Budapest, vol. 5, 1882, p. 152 (Matang, Borneo). — Day, Fauna Brit. India, vol. 1, 1889, p. 498. — Elera, Cat. Fauna Filip., 1895, p. 469 (Luzon, Cavite, Santa Cruz). — Regan, Journ. Bombay Nat. Hist. Soc., vol. 16, No. 2, 1905, p. 330 (Persian Gulf).

Leserinus ~~Stromateus~~ microchirus Cuvier, Hist. Nat. Poiss., vol. 9, p. 416, 1833 (on Risso) (error).

Leserinus microchirus Cuvier, Hist. Nat. Poiss., vol. 9, pl. 276, 1833.

Centrolophus microchirus (Bonelli) Cuvier, Hist. Nat. Poiss., vol. 9, p. 416, 1833 (name in text).

Amia poecilopteta (Cuvier)

Apogon poecilopterus (Kuhl and Van Hasselt) Cuvier, Hist. Nat. Poiss., vol. 2, 1826, p. 154. Java. — Cantor, Cat. Malayan Fishes, 1850, p. 42 (Pinang Sea, Singapore). — Günther, Cat. Fishes Brit. Mus., vol. 1, 1859, p. 232 (copied). — Meyer, Ann. Soc. Españ. Hist. Nat. Madrid, vol. 14, 1885, p. 12 (Cebu).

Apogon? praecilopterus Elera, Cat. Fauna Filip., 1895, p. 469 (Cebu).

Amia poecilopterus Bleeker, Atlas Ichth. (Veerl., Ind. vol. 7, 1873-76, p. 95 (compiled).

A doubtful species, not described since Cantor time. Meyer and Elera have given records for the Philippines though without details of their materials. The species is described with a large dark blotch on the spinous dorsal, which is said to have 6 spines and the soft dorsal

[illegible] outlined with [illegible]

Stromateus microchirus Günther, Cat. Fish. Brit. Mus., vol. 2, p. 398, 1860 (compiled). — Regan, Ann. Mag. Nat. Hist., ser. 7, vol. 10, p. 204, 1902 (Mediterranean; South Africa). — Pellegrin, Ann. Inst. Océan. Monaco, vol. 6, pt. 4, p. 34, 1914 (Nouakchott).

— Gilchrist and Von Bonde, Fisher. Marine Biol. Surv. South Africa, Rep. No. 3, No. 4, p. 11, pl. 19, 1922 (1924) (False Bay). — Barnard, Ann. South African Mus., vol. 21, pt. 2, p. 899, fig. 1927 (False, Mossel and Algoa Bays).

Depth 2; head 3 1/4 to 3 1/2, width 1 4/5 to 2. Snout 3 1/5 to 3 1/2 in head; eye 4 1/3 to 4 1/2, 1 to 1 1/4 in snout, 1 4/5 to 2 in interorbital; maxillary reaches eye, expansion 2 in eye, length 3 to 3 2/5 in head from snout tip; interorbital convexly elevated. Gill rakers 4 + 12, lanceolate, 2/3 gill filaments, which equal eye.

Scales 103 to 106 in lateral line to caudal base. Scales thick set over vertical fins. Scales with complete, concentric circuli, 21 to 25. Lateral line evenly convex to middle of caudal base.

D. 47 or 48, fourteenth ray 1 1/3 to 1 2/5 in head; A. 36 to 38, seventh ray 1 1/2 to 1 3/4; least depth of caudal peduncle 4;

p. 14 (Apolu). 1/m Castelnau, Record London Internat. Exhibition 1873, pt. 7, no. 5, p. 9 (Victoria). 1/m Schmeltz, Cat. Mus. Godeffroy, no. 6, 1874, p. 11 (Sydney). † 1/m Castelnau, Proc. Linn. Soc. New South Wales, London Internat. Exhib. Cat., 1872, p. 133 (Victoria); Proc. Zool. Acclimat. Soc. Victoria, vol. 1, 1872, p. 65 (Melbourne), p. 245 (Pt. Vincent's Gulf, South Australia). vol. 3, 1878, p. (350) 371 (Port Jackson). 1/m Klunzinger, Sitz. Ber. Akad. Wiss. Wien, math.-naturwiss. Klasse, vol. 80, pt. 1, 1879, p. 355 (Hobson Bay). 1/m Roughley, Fish. of Australia, 1916, p. 139, pl. 44 (Southern Australia, Tasmania, New Zealand). 1/m McCulloch, Fishes New South Wales, ed. 2, 1927, p. 60, pl. 25, fig. 215a. 1/m Fowler, Mem. Bishop Mus., vol. 10, 1928, p. 227 (copied Günther).

† 1/m Macleay, Proc. Linn. Soc. New South Wales, vol. 5, 1881, p. 405 (Port Jackson, Port Phillip, Tasmania).

pectoral $1\frac{1}{8}$ to $1\frac{1}{5}$; caudal slenderly forked, $2\frac{3}{4}$ to 3 in rest of fish.

Back brownish gray. Dorsals, anals and pectorals dusky brown. Sides above with 8 or 9 darker vertical bands. Under surfaces of body paler.

South Africa. Also in the eastern Atlantic and Mediterranean.

A. N. S. P., Nos. 11360 to 11375. Italy. Bonaparte Collection (382). Dr. T. B. Wilson. Length 115 to 143 mm.

Cve 129

Upeneichthys porosus (Cuvier)

Upeneus porosus Cuvier, Hist. Nat. Poiss., vol. 3, April 1829, p. 455. Rivers of New Zealand. 1/m Lesson, Voy. Coquille, Zool., vol. 2, pt. 1, 1830, p. 216 (Bay of Islands, New Zealand). 1/m Richardson, Travels in New Zealand, Dieffenbach, vol. 2, 1843, p. 207. V. 1/m Stead, Fishes of Australia, 1906, p. 131 (New South Wales, Victoria, Queensland, South and West Australia). + 2m Waite, Records Australian Mus., vol. 6, pt. 2, 1905, p. 64 (Freemantle); Records South Australian Mus., vol. 2, No. 1, April 23, 1921, p. 107, fig. 165,

Upeneichthys porosus Günther, Cat. Fishes Brit. Mus., vol. 1, 1859, p. 400 (Port Jackson, Australia). 1/m Steindachner, Sitz. Ber. Akad. Wiss. Wien, math.-naturwiss. Klasse, vol. 53, pt. 1, 1866, p. 430 (Port Jackson). 1/m Schmeltz, Cat. Mus. Godeffroy, No. 4, 1869,

√Stromateus maculatus Cuvier

√Stromateus maculatus Cuvier, Hist. Nat. Poiss., vol. 9, p. 399, 1833 (type locality, Valparaiso). — Jenyns, Voy. Beagle, Fish., p. 74, 1842 (Chiloe). — Guichenot, Hist. Chile, Gay, Zool., vol. 2, p. 248, 1848; Atlas Zool., Ichth., pl. 3 bis, fig. 1, 1854. — Günther, Cat. Fish. Brit. Mus., vol. 2, p. 398, 1860 (South America). — Meek, Proc. Acad. Nat. Sci. Philadelphia, p. 314, 1884 (type of √Stromateus brasiliensis). — Perugia, Ann. Mus. Cio. Genova, vol. 10, p. 615, 1891 (South America). — Berg, An. Mus. Nac. Buenos Aires, vol. 4, p. 42, 1892. — √Steindachner, Fauna Chilensis, p. 297, 1898 (Puerto Montt, Chile). — Abbott, Proc. Acad. Nat. Sci. Philadelphia, p. 337, 1899 (reference).

— Delfin, Cat. Peces de Chile, p. 57, 190- (reference). — Regan, Ann. Mag. Nat. Hist., ser. 7, vol. 10, p. 204, 1902 (Pacific coast of South America). — Evermann and Radcliffe, Bull. U. S. Nat. Mus., no. 95, p. 64, 1917 (reference).

— Devincenzi, Peces del Uruguay, p. 219, 1924 (Uruguay). — Fowler, Proc. Acad. Nat. Sci. Philadelphia, vol. 78, p. 268, 1926 (Buenos Aires).

Stromateus brasiliensis Fowler, Proc. Acad. Nat. Sci. Philadelphia, p. 116, fig. 2, March 1906 (type locality, Rio Grande-do Sul, Brazil).

depth $2\frac{1}{5}$ to $2\frac{7}{8}$; head $4\frac{1}{3}$ to 5, width $1\frac{1}{4}$ to $1\frac{9}{10}$. Snout $3\frac{1}{3}$ to $3\frac{1}{5}$ in head; eye $4\frac{1}{2}$ to $4\frac{3}{4}$, $1\frac{2}{5}$ in snout, $1\frac{3}{4}$ in interorbital; maxillary reaches $\frac{7}{8}$ to eye, length $3\frac{5}{6}$ to $3\frac{7}{8}$ in head; interorbital $2\frac{2}{5}$ to $2\frac{3}{4}$, well elevated convexly. Gill rakers 5+13, $\frac{2}{5}$ of gill filaments, which $\frac{5}{6}$ of eye; $1\frac{2}{5}$ in lateral line, scales very small, almost entirely cover dorsals and anals. Cheeks and opercles scaly, rest of head naked. Lateral line convex.

D. V to VII, 38? to 40, first branched ray $1\frac{3}{4}$ in head; A. III to V, 35 to 37, first branched ray $1\frac{3}{4}$; least depth of caudal peduncle $2\frac{1}{4}$ to $2\frac{7}{8}$; caudal $3\frac{1}{3}$ to 4 in rest of fish; pectoral $4\frac{1}{2}$.

Cav 1:30

Genus Upeneichthys Bleeker

Upeneichthys Bleeker, Verhandel. Akad. Wetensch. Amsterdam, vol. 2, 1855, p. 7. Type Upeneus porosus Cuvier.

Hyupeneichthys Ogilby, Edible Fishes New South Wales, 1893, p. 33. Type Upeneus porosus Cuvier. (Corrected orthography.)

Teeth in both jaws and on vomer, none on palate.

Brown above, pale below, evidently whitish. Barb with many close set darker brown ellipsoid blotches, long axes horizontal. Fins brownish.

Brazil, Uruguay, Argentina, Chile, Peru.

A. N. S. P., No. 11354. Rio Grande do Sul, Brazil. Mus. Comp. Zool. Cambridge. Length 348 mm. Type of Strandtes brasiliensis.

A. N. S. P., one example. Buenos Aires. Pedro Serié, 1922. Purchased. Length 363 mm.

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Analysis of [redacted] genera

a.' Dentition variously incomplete, never complete.

[b.' Upper jaw toothless; lower jaw, vomer and palatines with teeth. Mullus.]

b.² Upper jaw with teeth.

c.' Vomer and both jaws with teeth, none on palatines. Upeneichthys.

c.² Palate toothless.

d.' Teeth in jaws in several rows or in villiform band. Mulloidichthys.

d.² Teeth in jaws stronger, uniserial. Pseudupeneus.

a.² Dentition complete, teeth in both jaws, on vomer and palatines. Upeneus.

Carl 3 navel only

Stromateus fiatola Linnaeus

Stromateus fiatola Linnaeus, Syst. Nat., ed. 10, pt. 1, p. 248, 1758 (type locality, Mediterranean Sea; Red Sea); ed. 12, pt. 1, p. 432, 1766 (copied). — Bonnaterre, Tabl. Ichth., p. 42, 1788 (Méditerranean; Red Sea). — Gmelin, Syst. Nat. Linn., vol. 1, p. 1148, 1789 (copied). — Walbaum, Artedi Pisc., vol. 3, p. 122, 1792 (copied). — Lacépède, Hist. Nat. Poiss., vol. 2, pp. 315, 316, 1800 (copied). — Cuvier, Hist. Nat. Poiss., vol. 9, p. 373, pl. 272, 1833 (Cette; Gulf of Naples; Alexandria). — Günther, Cat. Fish. Brit. Mus., vol. 2, p. 397, 1860 (Mediterranean).

— Regan, Ann. Mag. Nat. Hist., ser. 7, vol. 10, p. 203, 1902 (Mediterranean, South Africa). — Pellegrin, Ann. Inst. Océan. Monaco, vol. 6, pt. 4, p. 34, 1914 (Cape Blanco).

— Norman, Ann. Mag. Nat. Hist., ser. 9, vol. 9, p. 320, 1922 (Natal).

— Barnard, Ann. South African Mus., vol. 21, pt. 2, p. 897, pl. 33, fig. 2, Oct. 1927 (Table Bay; False Bay; Agulhas Banks; Natal).

Stromateus fiatula Schneider, Syst. Ichth. Bloch, p. 492, 1801 (copied) (error).

Chrysostromus fiatoloides Lacépède, Hist. Nat. Poiss., vol. 4, p. 697 (698), 1802 (type locality, Mediterranean) (in Rondelet).

Stromateus capensis Pappe, Synops. Edible Fish Cape of Good Hope, ed. 1, p. , 1854 (type locality, Cape of Good Hope). — Bleeker, Nat. Tydsk. Ned. Indie, vol. 2, p. 53, 1860 (reference). — Gilchrist and Von Bonde, Rep. Marine Biol. Survey South Africa, No. 3, No. 4, p. 18, 1922 (1924) (Cape of Good Hope; South Coast; False Bay). — Fowler, Proc. Acad. Nat. Sci. Philadelphia, vol. 77, p. 212, 1925 (Kuyana coast, 120 fathoms).

e.[2] dorsal spines 6.

f.' Caudal with round dark spot.
rhodoptera

f.[2] No dark caudal spot, uppers and lower caudal edges dusky. koilomatodon

d.[2] No dark transverse bands; back of tail with large dark blotch; dark streak obliquely across cheek from eye; dorsal spines 7.
bandanensis

d.[3] Body with one or more longitudinal dark bands from head to caudal.

g.' Dorsal spines 7.

h.' Caudal with dark transverse bands, though also black median basal spot present; 2 pale longitudinal bands (leaving pale interspaces in life as blue longitudinal bands parallel with dorsal streak and blue streak from eye to maxillary). hartzfeldi

h.[2] Caudal without transverse dark bands.

Stromateus microchirus (not Bonelli) Gilchrist, Marine Biol. Rep. South Africa, ~~Zo~~. vol. 3, p. 10, fig. 6 (egg and larva), 1916.

Analysis of the species.

a.' Scales large, 20 to 30 in lateral line.
b.' Sphaeramia new subgenus. Body orbicular, depth more than half length; body spotted with brown.
c.' Front dorsal rays prolonged in filaments; broad transverse dark band from first dorsal, with brown spots posteriorly. nematoptera
c.² Front dorsal rays not prolonged in filaments; narrow dark transverse band from front of first dorsal to vent and brown spots all over body. orbicularis
b.² Amia. Body elongate, depth less than half length.
d.' Two broad dark transverse bands, first from first dorsal, second from soft dorsal.
e.' dorsal spines 7; caudal base with small round dark spot. taeniata

Depth 2 1/6 to 2 1/3; head 4 to 4 1/4, width 1 3/4 to 1 4/5. Snout 3 1/10 to 3 1/2 in head; eye 5 2/5 to 5 2/3, 1 1/2 in snout, 2 1/4 in interorbital; maxillary reaches eye, expansion 2 to 2 2/3 in eye, length 3 1/10 to 5 in head; interorbital 2 2/5 to 3, convex, greatly elevated. Gill rakers 6+11, lanceolate, 1/2 of gill filaments or 1 3/4 in eye.

Scales 120 to 137 in lateral line to caudal base; 24 to 28 above, 50 to 58 below, Scales thick set over vertical fins. Scales with ~~small~~ complete concentric circuli, 40 to 45. Lateral line evenly convex to middle of caudal base.

D. VI, 38 or 39, ninth ray 1 1/2 to 1 3/4 in head; A. III, 31 or 32,

~~...e next problem.:~~

fourth ray $1\frac{2}{3}$ to $1\frac{7}{8}$; least depth of caudal peduncle $3\frac{1}{8}$ to $3\frac{2}{5}$; pectoral 1 to $1\frac{1}{4}$; caudal $2\frac{3}{4}$ to $3\frac{1}{8}$ in rest of fish, widely forked.

Back purplish brown, silvery white below. Several rows of dark spots (blue in life) above lateral line and irregular longitudinal bands below.

South Africa, Natal, Red Sea?

C. N. H. P., Nos. 11355 to 11358. Italy. Bonaparte Collection (381). Dr. J. B. Wilson. Length 318 mm.

in motion. By means of these tactile organs the feel or touch most all objects in their incessant search of food in the form of small marine animals.

Cue 129 Mullus erythraeus Vanvage.

Mullus erythraeus Vanvage, Bull. Soc. Philomath., Paris, ser. 7, vol. 5, 1881, p. 101. Red Sea.

depth 5 1/2 in total; head 4. Snout very long. Maxillary reaches opposite front eye edge. Vomerine plate large, emarginate behind. Length 200 mm.

(Vanvage.)

This doubtful species may not belong in the Atlantic genus Mullus Linnaeus. It is said, however, to be very near Mullus surmuletus, differing in the more elongate snout, forehead oblique to front of eye

Genus Pampus Bonaparte

Pampus Bonaparte, Fauna Italica, Pesc., vol. 3, (1834. fasc. 9, no pagination, Litypic. (Type Stromateus candidus Cuvier Valenciennes, affixed by Jordan, Genera of Fishes, pt. 2, 1919, p. 187.)

Stromateoides Bleeker, Nat. Tijdsr. Ned. Indie, vol. 1, (1850) p. 368, (Type Stromateoides cinereus Bloch, designated by Gill, Proc. Acad. Nat. Sci. Philadelphia, p. 126, 1862, ~~Jordan, Genera of Fishes, pt. 2, 1919, p. 248.~~)

Chondroplites Gill, Proc. Acad. Nat. Sci. Philadelphia, (1862) p. 126, (Type Stromateus atous Valenciennes, orthotypic.)

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Gviella melanichthys (Richardson)
Cremidens melanichthys Richardson,
Ichth. China Japan, 1846, p. 243 (on
Schlegel). Seas of Japan and China.
Gviella melanichthys Bleeker, Verhandel.
Kon. Akad. Wetensch., Amsterdam, vol. 18,
no. 6, 1879, p. 8 (Kiukiu). 1/m Jordan and
Starks, Proc. U. S. Nat. Mus., vol. 32,
1907, p. 498 (Wakanoura). 1/m Jordan
and Thompson, Proc. U. S. Nat. Mus.,
vol. 41, 1912, p. 592, fig. 14 (Wakanoura).
1/m Snyder, Proc. U. S. Nat. Mus., vol.
42. 1912, p. 415 (Tokyo, Misaki, Aburne,
Tanegashima). 1/m Jordan and Thompson,
Mem. Carnegie Mus., vol. 6, no. 4,
Sep. 1914, p. 258, fig. 31 (Misaki).

Body deeply ovoid, compressed. Head small, obtuse, compressed. Snout short, blunt. Eye moderate, little premedian in head. Mouth small. Teeth small, uniserial in jaws. Gill membranes broadly united with isthmus. Gill rakers very short. Pseudobranchiae absent. Branchiostegals 5 to 7. Vertebrae 35 or 36. No air bladder. Pyloric caeca numerous. Scales small, cover vertical fins. Lateral line arched, high, extends below bases of last dorsal rays, usually smooth. Dorsal and anal variably elevated, with prominent trenchant spines, which more or less concealed with age. Caudal forked. Pectoral long, rays 25 to 27. No ventrals.

Analysis of Species

a.[1] Chondroplites. Caudal emarginate or but moderately forked.

chinensis.

a.[2] Pampus. Caudal deeply forked, lobes long, narrow, slender, sharp pointed.

argenteus.

~~ff~~.[3] Tail with large lateral dusky blotch.

~~ff~~.[1] Broad brown band from snout to opercle; depth 2 $\frac{2}{3}$ to 2 $\frac{3}{5}$. sangiensis

~~ff~~.[2] No dark band from snout to opercle; depth 2 $\frac{1}{5}$ to 2 $\frac{1}{2}$. hyalosoma

~~ff~~.[2] Depth 3 $\frac{2}{5}$ to 3 $\frac{3}{5}$. cypselurus

a.[2] Lepidamia. Scales small, 36 in lateral line; 5 dark longitudinal lines above and parallel with lateral line and 11 dark horizontal lines below. multitaeniata

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Pampus chinensis (Euphrasen)

Stromateus chinensis Euphrasen, Kon. Vetensk. Akad. Nya Handl. Stockholm, vol. 9, p. 54, pl. 9, 1788 (type locality, "Castellum Chinense Bocca Tigris dictum"). — Walbaum, Artedi Pisc., vol. 3, p. 124, 1792 (on Euphrasen).

depth 1 $\frac{4}{5}$ to 1 $\frac{7}{8}$; head 2 $\frac{1}{5}$ to 2 $\frac{2}{5}$, width 2 to 2 $\frac{1}{10}$. Snout 4 to 4 $\frac{1}{2}$ in head from snout tip; eye 2 $\frac{1}{3}$ to 2 $\frac{2}{3}$, much greater than snout or interorbital; maxillary reaches $\frac{2}{5}$ to $\frac{1}{2}$ in eye, expansion 2 $\frac{1}{4}$ to 2 $\frac{1}{2}$ in eye, length 2 to 2 $\frac{1}{5}$ in head; bands of very minute villiform teeth in jaws, on vomer and palatines; interorbital 3 to 3 $\frac{2}{3}$, nearly level; preopercle ridge entire, edge finely denticulate; preorbital entire. Gill rakers 7 + 24, lanceolate, twice gill filaments or 2 in eye.

Scales 22 or 23 in lateral line to caudal base and 3 or 4 more on latter, 2 above, 6 below, 6 or 7 predorsal;

? Perca chinensis Osbeck, Reise Ost Ind. China, p. 335, 1765 (type locality, China). — Bonnaterre, Tabl. Ichth., p. 132, 1788 (copied). — Gmelin, Syst. Nat. Linn., pt. 1, p. 1318, 1789 (copied). — Walbaum, Artedi Pisc., vol. 3, p. 347, 1792 (copied). — Forster, Fauna Indica, p. 15, 1795. — Wu, Contrib. Biol. Lab. Sci. Soc. China, vol. 5, no. 4, pt. 1, p. 88, fig. 69, 1929 (Amoy).

Amia nematoptera (Bleeker)

Apogon nematoptera Bleeker, Act. Soc. Sci. Ind. Neerl. (Manado), vol. 1, 1856, p. 35. Manado, Celebes.

Apogon nematopterus Günther, Cat. Fishes Brit. Mus., vol. 1, 1859, p. 233 (copied).

Amia nematopterus Bleeker, Atlas Ichth. Ind. Néerl., vol. 7, 1875-76, p. 79 (Celebes).

Amia nematophora Bleeker, Atlas Ichth. Ind. Néerl., vol. 7, 1875-76, pl. (35) 313, fig. 1.

Stromateus sinensis

Forster, Fauna Indica, p. 14, 1795 (on Euphrasen). Schneider, Syst. Ichth. Bloch, (1801) p. 492, (copied). — Cantor, Journ. Asiatic Soc. Bengal, vol. 18, pt. 2, p. 1122, 1849 (1850) (Malay Peninsula and Islands). — Day, Fishes of Malabar, p. 76, 1865; Fishes of India, pt. 2, p. 246, pl. 51 C, fig. 6, 1876 (Sunderbunds; Bombay); Fauna British India, Fishes, vol. 2, p. 197, 1889. — Steindachner, Sitzg. Ber. Akad. Wiss. Wien, Math.-naturw. Kl., vol. 102, pt. 1, (1893) p. 236, (Swatow).

Sparus sinensis Shaw, General Zool., vol. 4, (1803) p. 466 (on Osbeck). — Lacépède, Hist. Nat. Poiss., vol. 4, (1803) pp. 46, 184, (China).

fig. 1 (types of Gyrella ramsayi and Gyrella mentalis, Kawau Island, New Zealand) 1/3 Waite, Records South Australian Mus., vol. 2, No. 1, April 23, 1921, p. 113, fig. 74. 1/3 McCulloch, Fishes New South Wales, 1927, p. 62, pl. 25, fig. 221a.

Melanichthys tricuspidata Castelnau, Proc. Zool. Acclimatiz. Soc. Victoria, vol. 1, 1872, p. 67 (Melbourne); Record London Internat. Exhib., 1873, pt. 7, No. 5, p. 10 (Victoria); Proc. Linn. Soc. New South Wales, vol. 3, 1879, pp. 350, 363.

Stromateoides sinensis Regan, Ann. Mag. Nat. Hist., ser. 7, vol. 10, (1902) p. 205, (China, India, Malaysia;

Pampus sinensis Chu, Biol. Bull. St. John's Univ., No. 1, (January 1931) p. 109 (reference). — Fowler, Proc. Acad. Nat. Sci. Philadelphia, vol. 87, p. 142, 1935 (Bangkok).

Analysis of ~~the~~ genera. 6 Lt Sun Cdy

a. Gerrinal. Anal fin short, of 2 to 4 spines and 7 to 10 rays.

b. Anal spines 3.

c. Preopercle edge entire. Gerres.

c.3 Preopercle edge serrate. Diapterus.

b.2 Anal spines 4; preopercle edge entire or serrate. Gerreomorpha.

a.2 Pentaprionimal. Anal fin long, spines usually more than 3, rays 13 to 17.

d. Spinous dorsal and anal higher than rayed fins; anal spines 5 or 6; pectoral long, falcate, much longer than head. Pentaprion.

d.2 Vertical fins uniform in height; anal spines 3; pectoral shorter than head. Parapenaeus.

Can 13 Nam only

Stromateus albus Cuvier, Valenciennes, Hist. Nat. Poiss., vol. 9, p. 388, 1833 (type locality, Pondicherry).

Stromateus atous Cuvier, Hist. Nat. Poiss., vol. 9, p. 389, 1833 (on Atoo-koia Russell, Fishes of Coromandel, vol. 1, p. 33, pl. 44, 1803, type locality, Vizagapatam). — Richardson, Ichth. China and Japan, p. 273, 1846 (Sea of China). — Günther, Cat. Fish. Brit. Mus., vol. 2, p. 399, 1860 (copied). — Jouan, Mém. Soc. Sci. Nat. Cherbourg, vol. 13, p. , 1866 (1867) (Hong Kong). — Károli, Természetr. Füzetek, Budapest, vol. 5, p. 161, 1881 (Singapore).

Stromateoides atokoia Bleeker, Nat. Tijds. Ned. Indie, vol. 1, 1850, p. 369 (type locality, Batavia; Samarang; Rembang; Surabaya); Verh. Batavia. Genoots. (Nakredl.), vol. 24, 1852, p. 76 (same localities); (Nal. Ichth. Bengal), vol. 25, 1853, p. 46 (reference).

Stromateoides atoukoia Bleeker, Nat. Tijds. Ned. Indie, vol. 3, 1852, p. 445 (Banka), p. 717 (Karang Kadji, Banka); vol. 11, 1856, p. 419 (Muntok, Banka); Act. Soc. Sci. Ind. Neerl., vol. 3, No. 6, 1857-58, p. 2 (Sinkawang, Borneo); No. 9, 1857-59, p. 2 (Padang); Nat. Tijds. Ned. Indie, vol. 16, 1858, p. 196 (Sinkawang); Act. Soc. Sci. Ind. Neerl., vol. 5, No. 7, 1858-59, p. 2 (Sinkawang, Borneo); Nat. Tijds. Ned. Indie, vol. 21, 1860, p. 137 (Muntok, Banka).

Pseudobranchiae concealed. Branchiostegals 6. Lower pharyngeals close together, often appearing united, teeth blunt. Air bladder present. Pyloric coeca small, few, about 3. Vertebrae 23 or 24, of which 13 or 14 caudal. Oviparous. Scales moderate, deciduous, cycloid or minutely ctenoid. Lateral line complete, concurrent with profile of back. Dorsals and anals with basal scaly sheaths into which fins depress partly or entirely. Dorsal fin single, continuous or deeply notched, spinous and rayed portions equally developed. Dorsal spines usually 9, sometimes 10. Anal spines usually 3, sometimes 2 or 4. Ventrals thoracic, with spine and 5 rays, rather close together and slightly behind pectorals.

Usually small or moderate sized fishes of the tropical and temperate

depth 1 1/4 to 1 1/3; head 3 2/5 to 4. Snout 3 1/4 in head; eye 3 2/3 to 6, 1 to 2 1/2 in snout, 1 2/3 in interorbital; maxillary reaches 4/5 to eye to 1/3 in eye; interorbital 1/2 in head, elevated convexly.

Scales small, deciduous.

D. 43 to 50, spines feeble, concealed, fifteenth to eighteenth rays longest, which long as pectoral and 1 1/2 times head, then abruptly shorter, upper fin edge concave, hind part rounded; A. 39 to 42, like dorsal; caudal emarginate in young, moderately forked and lobes subequal with age; least depth of caudal peduncle 2 2/5 in head; pectoral rays 25, length 2 3/4 in fish without caudal.

Brownish gray above, silvery below, with numerous

small brown dots. Fins silvery gray at base, blackish in marginal parts. Length 180 mm.

(Day, Regan.)

India, Malaya, East Indies, China.

separated, both short, spines of first 6 to 8. Anal short, with 1 or 2 small weak spines. Caudal forked. Ventrals thoracic, with spine, 5 rays and axillary flap.

Fishes of moderate or small size, most all noted for their brilliant colors of which red and yellow are most frequent. Most all are valued food fishes, with excellent flavor and tender white flesh. Those known to the ancients were highly prized. Goat fishes are found in all tropical seas, the individuals often numerous. Some range into temperate regions, others enter estuaries, though none dwell in fresh water. The eggs are pelagic. These fishes are bottom inhabitants, swimming about with their barbels constantly

Pampus argenteus (Euphrasen)

Stromateus argenteus Euphrasen, Kgw. Vet. Acad. Nya Handl. Stockholm, vol. 9, (1788) p. 49, pl. 2, (type locality, "Castellum Chinense Bocca Tigris dictum"). — Walbaum, Artedi Piscium, vol. 3, (1793) p. 123, (copied). — Richardson, Ichth. China and Japan, (1846) p. 272, (China Seas; Canton). — Günther, Cat. Fish. Brit. Mus., vol. 2, (1860) p. 400, (China). — Karoli, Termesz. Füzetek, Budapest, vol. 5, (1880) p. 162, (Saramgom; Canton). — Peters, Monatsb. Akad. Wiss. Berlin, (1880) p. 924, (Ningpo). — Günther, Rep. Voy. Challenger, vol. 1, pt. 6, (1880) p. 55, (Hong Kong). — Vaillant, Bull. Soc. Philom. Paris, ser. 7, vol. 5, (1881) p. 106, (Swatow).

f.[2] Second dorsal spine 1 2/3 to 1 7/8 in head; depth 2 1/2 to 2 3/4. ozena.

f.[2] Pectoral not reaching anal origin. macrozoma.

l.[2] Scales 47 to 50 in lateral line; depth 2 1/2; 5 rows of brick red spots below lateral line. darnleyensis.

d.[2] Body slender, depth 3 1/4 to 3 2/5. oblongus.

c.[2] Premaxillary groove completely sealed in front; pectoral not reaching anal; depth 2/5 to 2 1/2.

l.[1] Scales 38 to 40 in lateral line.

m.[1] Uniformly silvery. ovatus.

m.[2] Indistinct vertical bands 6 or 7. subfasciatus.

l.[2] Scales 40 or 41 in lateral line. bacchensis.

b.[2] Synistius. Last dorsal spines equally long as soft rays of fin.

n.[1] depth 2 to 2 1/4; scales 46 to 48. rappi.

n.[3] depth 2 3/4 to 3; scales 45. argyreus.

a.[2] Pertica. Second dorsal spine greatly elongated, usually greater than body depth. filamentosus.

Can 13 named only

— Seale, Philippine Journ. Sci., vol. 9, (1914) p. 63, (Hong Kong).

— Sowerby, Nat. in Manchuria, vol. 4, (1930) p. 158, (Tientsin).

— Jordan and Metz, Mem. Carnegie Inst., vol. 6, no. 1, p. 27, pl. 4, June 1913 (Fusan, Korea).

Stromateoides argenteus Bleeker, Verh. Batavia. Genoot. (Nat. Schth. Bengal), vol. 25, (1853) p. 46, (reference). — Jordan and Seale, Proc. Davenport Acad. Sci., vol. 10, (May 22, 1905) p. 8, (Hong Kong). — Fowler, Proc. Acad. Nat. Sci. Philadelphia, vol. 81, (1929) p. 596, (Shanghai), p. 605 (Hong Kong); Hong Kong Nat., vol. 2, no. 4, (November 1931) p. 293, fig. 3, (Hong Kong). — Herre, Hong Kong Nat., Suppl., no. 3, February (1934) p. 28, (Hong Kong). Tanaka, Journ. Faculty Sci. Tokyo, Zool. 4, vol. 3, pt. 1, p. 24, Nov. 4, 1931 (identity of Stromateoides nozawae).

Analysis of the species Catostomidæ

a.' Second dorsal spine not greatly elongated, usually greatly less than body depth.

b.' Genus. Last dorsal spines shorter than soft rays following.

c.' Premaxillary groove scaleless, usually extends at median naked area into interorbital.

d.' Body comparatively deep, depth 1 7/8 to 2 7/8.

e.' Scales 33 to 43 in lateral line.

f.' Pectoral reaches opposite or beyond anal origin.

g.' Scales 4 or 5 above lateral line to spinous dorsal origin.

h.' Second dorsal spine 1 3/5 to 2 in head; depth 2 to 2 1/2.

i.' Narrow black edge on spinous dorsal. lucidus.

i.² No black edge or blotch on spinous dorsal. limbatus.

h.² Second dorsal spine 1 2/5 to 1 3/5 in head; depth 2 1/2 to 3. kansas.

g.² Scales 5 to 7 above lateral line to spinous dorsal origin.

f.' Second dorsal spine 1 1/10 to 1 1/3 in head.

b.' Depth 1 7/8 to 2 1/8. abbreviatus.

b.² Depth 2 1/5 to 2 1/2. Cave Spring only. pricei.

Pampus argenteus Jordan and Hubbs, Mem. Carnegie Inst., vol. 10, no. 2, June 27, (1925), p. 226, (Foochow).

Yokohama; Kyoto;

Carang. Gerres lucidus Cuvier

Gerres lucidus Cuvier, Hist. Nat. Poiss., vol. 6, 1830, p. 477. 1/m Jouan, Mém. Soc. Hist. Nat. Cherbourg, series 2, vol. 3, 1868, p. 263 (Hong Kong). 1/m Day, Fishes of India, pt. 1, 1875, p. 99, pl. 25, fig. 5; Fauna British India, vol. 1, 1889, p. 539. 1/m Zugmayer, Abhandl. Kon. Bayer. Akad. Wiss., math.-physik. Klasse, vol. 26, band 6, 1917, p. 11 (Mekran). 1/m Fowler, Journ. Bombay Nat. Hist. Soc., vol. 32, no. 4, May 31, 1928, p. 701 (Ceylon); vol. 33, no. 1, 1928, p. 115 (Bombay). 1/m Tirant, Service Océanogr. Pêch. Indo China, 1929, note 6, p. (9) 13 (Hué River).

Stromateus cinereus Bloch, Naturg. Ausl. Fische, vol. 9, p. 90, pl. 420, 1795 (no type locality; Collection Herr John [= India]). — Schneider, Syst. Ichth. Bloch, p. 491, 1801 (Tranquebar). — Lacépède, Hist. Nat. Poiss., vol. 4, pp. 692, 693, 1802 (East Indies). — Shaw, General Zool., vol. 4, p. 109, 1804. — Cantor, Journ. Asiatic Soc. Bengal, vol. 18, pt. 2, p. 1125, 1849 (1850) (Malay Peninsula and islands). — Günther, Cat. Fish. Brit. Mus., vol. 2, p. 400, 1860 (Malay Peninsula). — Day, Fishes of Malabar, p. 78, 1865 (young); Fishes of India, pt. 2, p. 247, pl. 53, fig. 3, 1876; Fauna British India, Fishes, vol. 2, p. 198, 1889. — Károli, Termesz. Füzetek, Budapest, vol. 5, p. 161, 1885 (Singapore). — Day.

Sphaeramia, new subgenus.

Type: Agrogon nematoptera Bleeker.

Distinguished from subgenus Amia by the rounded or orbicular body, depth more than half the length. Scales large, as in Amia. Body with brown spots.

(σφαῖρα, sphere, with reference to "the spherical profile," Amia.)

— Wu, Contrib. Biol. Lab. Sci. Soc. China, vol. 5, no. 4, pt. 1, 1929, p. 87, fig. 68 (Amoy).

Stromateoides cinereus Bleeker, hat. Tijds. ned. Indië, vol. 1, (1850) p. 368, (Batavia); vol. 3, 1852, p. 53 (Singapore); Verh. Batavia. Genoot. (makreel.), vol. 24, (1852) p. 75 (Batavia); (hal. Ichth. Bengal), vol. 25, (1853) p. 46 (reference); hat. Tijds. ned. Indië, vol. 7, (1854) p. 312 (Bantem); vol. 9, (1855) p. 394 (north Pasuruan); vol. 10, (1856) p. 347 (Rio, Bintang); vol. 11, (1856) p. 419 (Muntok, Banka); Act. Soc. Sci. Ind. neerl., vol. 3, no. 6, (1857-58) p. 2 (Linkawang,

showing rows of long oval blotches or marks one over the other, the reason usually being that these marks are apparent in the adult where the vertical bands existed in the immature."

(Ray.)

Genres australis Castelnau. Cruz 29

Genres australis Castelnau, Victoria Aff. Rec. Philadelphia Exhibition (Rep. Fishes Australia), [illegible] 1875, p. 43. Swan River, West Australia. + Macleay, Proc. Linn. Soc. New South Wales, vol. 5, 1881, p. 377 (compiled).

Depth 2 1/3; head 3. Snout equals eye. Second dorsal spine thick, long, half length of body, third nearly as long, but slender. Second anal spine stronger but shorter than third. Silvery, upper parts purple. Soft dorsal with a line of faint obscure

Borneo); no. 9, (1857-58) p. 5, (Priaman, Sumatra); Nat. Tijds. Ned. Indië, vol. 15, (1858) p. 243 (Singapore); vol. 16, (1858) p. 407 (Japara, Java), p. 434 (Pamanghat); Nat. Tijds. Ned. Indië, vol. 21, (1860) p. 137 (Muntok, Banka); Ned. Tijds. Dierk., vol. 2, (1865) p. 174 (Siam; compiled); Verh. Akad. Wet. Amsterdam, ser. 2, vol. 2, (1868) p. 291 (Rio, Bintang). — Regan, Ann. Mag. Nat. Hist., ser. 7, vol. 10, p. 206, 1902 (India; Malaysia; China).

Pampus cinereus Fowler, Journ. Bombay Nat. Hist. Soc., vol. 33, no. 1, September 30, 1928, p. 109 (Bombay); Proc. Acad. Nat. Sci. Philadelphia, vol. 86, (1934) p. 150 (Bangkok); vol. 87, p. 142, 1935 (Bangkok; Palawan). Proc. Acad. Nat. Sci. Philadelphia, p. 499, July 1905 (Baram, North Borneo);

rounded: and the second and third slightly or very elongate, but this elongation often varies considerably, as seen in G. filamentosus; in which it may be only two-thirds the height of the body or even extending as far as the base of the caudal fin, and though this difference is generally, it is not always due to age, but in the young it is mostly shorter than in the adult. Even in the anal spines the second may be equal in length to the third or a little longer or shorter in the same species. As regards colour the young are generally vertically banded, and these bands may be indistinct or even entirely absent in the adult. In those with longitudinal bands they sometimes become interrupted in large specimens,

Stromateus aculeatus Schneider, Syst. Ichth. Bloch, (1801) p. 492 (type locality, "mari Virensi"). — Cuvier Valenciennes, Hist. Nat. Poiss., vol. 9, (1833) p. 394, (copied). — Richardson, Ichth. China and Japan, (1846) p. 273 (China Seas).

Stromateoides aculeatus Bleeker, Verh. Batavia. Genoot. (Nal. Ichth. Japan), vol. 25, (1853) p. (15) 37 (Nagasaki); Act. Nov. Sci. Ind. Neerl., vol. 3, no. 3, (1857-58) p. 6, (Japan). — Rutter, Proc. Acad. Nat. Sci. Philadelphia, (1897) p. 73, (Iwatow).

Stromateus candidus Cuvier, Valenciennes, Hist. Nat. Poiss., vol. 9, (1833) p. 397, (type locality, Malabar). — Jerdon, Madras Journ. Lit. Sci., p. 137, 1851.

Branchiostegals 6. Scales moderate, cycloid or finely ctenoid. Dorsals equal, spines 9, rays 10 or 11 and front spines more or less elevated. Anal spines 3, rays 7 to 9 rays. Caudal forked. Pectoral usually long and falcate.

"The species comprising this genus are somewhat difficult of determination unless a good collection is brought together, but even then some important considerations have to be borne in mind prior to deciding whether the specimen belongs to a known or an unknown species. The eye, certainly in some, increases in comparative size with the head as age advances, as occurs in Hegalops cyprinoides, etc. The first dorsal spines may be compressed or

Stromateoides candidus Jordan and Thompson, Mem. Carnegie Mus., vol. 6, no. 4, p. 241, Sept. 1914 (Alaska).

of spinous dorsal
dusky; round black
basal caudal spot
simple. diversa

dd.[2] Soft dorsal and anal
often with dark subbasal
band; spinous dorsal
with wide black oblique
band anteriorly; small
black median caudal spot,
sometimes reflected above
and below. nigrocincta

cc. ~~dd.~~[2] Black rostral band
not including chin, reaches
postocular and caudal peduncle;
another parallel black band
from snout above till below
soft dorsal; spinous dorsal
apex black. semilineata

bb.[3] Small black spot each
side of occiput; black

1905

Stromateus securifer Cuvier Valenciennes), Hist. Nat. Poiss., vol. 9, (1833) p. 394, pl. 273 (type locality, Bombay).

— Cantor, Ann. Mag. Nat. Hist., (May 9, 18) p. 15) (Chusan). —

Richardson, Ichth. China and Japan, (1846) p. 273, (China Seas).

Peprilus securifer Swainson, Nat. Hist. Animals, vol. 2, p. 253, 1839 (reference).

Stromateus griseus Cuvier Valenciennes, Hist. Nat. Poiss., vol. 9, (1833) p. 394 (type locality, Pondicherry).

Stromateus punctatissimus Schlegel, Fauna Japonica, Poiss., ~~XXX~~ fig. 7-9, (1845) p. 121, pl. 65, (type locality, Nagasaki Bay).

and Gaimard, virtually, as
Catochaenum Cantor proposed to
replace Gerres (Cuvier) Quoy and Gaimard.
Xystictus Gill, Proc. Acad. Nat. Sci.
Philadelphia, 1862, p. 235. Type
Gerres longirostris (Rapp) Günther =
Xystaema rappi Barnard, monotypic.
Xystaema Jordan and Evermann,
Proc. California Acad. Sci., series 2,
vol. 5, 1895, p. 471. Type Mugil
cinereus Walbaum, monotypic.
Pertica Fowler, Journ. Acad. Nat.
Sci. Philadelphia, series 2, vol. 12, 1904,
p. 530. Type Gerres filamentosus
Cuvier, orthotypic.

Body elevated, oblong ovate. Eyes
large. Mouth extremely protractile,
extends down as protracted.
Preopercle entire. Air bladder
simple. Pyloric coeca few, 3 or 4.

Stromateus echinogaster Basilewsky, Nouv. Mém. Sci. Nat. Moscow, vol. 10, p. 223, 1855 (type locality, Pekin [= Pechili Gulf ?]).

Stromateoides echinogaster Jordan and Metz, Mem. Carnegie Mus., vol. 6, no. 1, p. 28, pl. 5, June 1913 (Chinnampo; Port Arthur). — Lowerby, Natural. in Manchuria, vol. 4, p. 156, 1930 (Tsientsin).

" "

Stromateoides nozawae Ishikawa,
Proc. Dep. Nat. Hist. Tokyo Imp.
Univ., vol. 1, April 8, 1904, p. 8
(type locality, Kanagawa).—

Jordan, Tanaka, Snyder, Journ.
College Sci. Tokio, vol. 33, 1913,
p. 136 (reference).

Pampus lighti Evermann and Shaw,
Proc. Cal. Acad. Sci., vol. 16, No. 4,
p. 114, Jan. 31, 1927 ser. 4, (type locality,
Kanhsing).

27638 and 27639 A.N.S.P. Padang, Sumatra. A.C. 1918
Harrison and H.L. Hiller. Length 86 to 127 mm.
~~respondentia~~ When fresh in arrack mostly silvery white. Upper surface of body washed with dilute olivaceous, lower surface white. Side with number of oblong gray brown vertical streaks. Snout dusky above. Iris pale yellowish. Fins dilute olive brown, verticals somewhat grayish. Dorsal and caudal edges darker than rest of fins.

53107 A.N.S.P. Delagoa Bay, Portuguese East Africa. H.W. Bell Marley. July 1923.
Length 165 mm.

48622 A.N.S.P. Philippines. Commercial Museum of Philadelphia.

49266 A.N.S.P. Philippines. Commercial Museum of Philadelphia.

52728 and 52729 A.N.S.P. Orion, Luzon. April 29, 1923. Rev. Joseph Clemens. Purchased.

Pampus simoprosopus Fowler, Proc. Acad. Nat. Sci. Philadelphia, vol. 86, 1934, p. 150, fig. 118 (type locality, Bangkok, Siam).

Cat 179

Gerres oblongus Cuvier

Gerres oblongus Cuvier, Hist. Nat. Poiss., vol. 6, 1830, p. 479. Ceylon. 1/2m Bleeker, Verhandel. Batavia. Genootsch. (Nat. Verz. Ichth. Bengal.), vol. 25, 1853, p. 38. 1/2m (Günther, Cat. Fishes Brit. Mus., vol. 1, 1859, p. 354; vol. 4, 1862, p. 264 (compiled). 1/2m Day, Fishes of India, vol. 1, 1875, p. 98, pl. 25, fig. 2 (Madras; Andamans); Fauna British India, vol. 2, 1889, p. 536. 1/2m Weber, Siboga Exped., vol. 57, 1913, p. 272 (Kawa, West Ceram). 1/2m Fowler, Proc. Acad. Nat. Sci. Philadelphia, 1925, p. 244 (Delagoa Bay).

Gerres oblongatus Pearson, Ceylon Administr. Rep., 1914, p. E6. (Error.)

Xystaema oblongus Barnard, Ann. South African Mus., vol. 21, pt. 2, 1927, p. 629 (Delagoa Bay).

depth 1 1/3 to 1 2/3; head 3 to 4 1/3, width 1 3/4 to 2 1/2. Snout 3 3/4 to 4 1/8 in head; eye 3 1/2 to 4 3/4, greater than snout in young, subequal with age, 1 1/4 to 2 2/5 in interorbital; maxillary reaches 1/4 to 2/5 eye, expansion 2 4/5, length from its own tip 2 to 3 3/4 in head; interorbital 2 7/8 to 3 1/8, convexly elevated. Gill rakers 2 to 4 + 8 to 11, lanceolate, 1/5 to 1/3 of gill filaments, which 7/8 of eye.

Scales minute. Lateral line greatly arched, extends close to and follows profile of back.

D. V to VIII or IX, III to V, 34, I to 40, I, first branched ray 2 2/3 to 3 3/4 in fish without caudal; A. V or VI, III to V, 33, I to 40, I, first branched ray 2 1/8 to 3 2/5; caudal

2 1/5 to 3 1/5 in rest of fish, deeply forked, lower lobe longer; pectoral 2 1/6 to 3 1/5, least depth of caudal peduncle 2 1/3 to 3 1/2 in head.

Back drab to plumbeus gray, lower half of body silvery white. Iris gray white. Fins dusky marginally and very dark at ends of dorsal, anal and caudal lobes with bases of lobes all whitish. Pectoral dusky gray.

India, Malaya, East Indies, Siam, China, Korea, Japan.

Pampus lighti Evermann and Shaw is based on an example 77 mm long with dorsal rays 48 and anal 45.

6689. Hong Kong, China
August 13, 1908. Length 310 mm.

forked.

Back pale brown, with purplish or lilac shades. Sides and below white, with silvery white shades. Iris silvery white. Fins all pale. Membranes of spinous dorsal dusky terminally and each membrane with dusky spot basally, mostly concealed by basal scaly sheath. A light dusky shade along front part of ventrals.

Portuguese East Africa, India, Ceylon, Andamans, East Indies, Philippines, Queensland, Melanesia, Micronesia, Polynesia.

U. S. N. M., No. 27160. Hong Kong.
D. S. Jordan. Length 174? mm caudal broken.

U. S. N. M., No. 32698. Indian Archipelago.
Leiden Museum. Length 285 mm.
As Stromateoides cinereus.

U. S. N. M., No. 37754. Korea.
Bernadou Collection. Length 195 to 210 mm. ~~Two examples. Length 195 to 210 mm.~~ As Stromateus atous.

U. S. N. M., No. ~~45280~~ 45280. Chemulpo, Korea. P. L. Jouy (686). Length 215 mm.

U. S. N. M., No. 45280. No locality.
P. L. Jouy. Length 83 to 145 mm.
Two examples.

U. S. N. M., No. 75942. No locality.
P. L. Jouy (2206). Length 235 mm.

U. S. N. M., No. 85863. China.
A. de C. Sowerby. Length 83 to 148 mm.
Seven examples.

U. S. N. M., No. 86361. China.
A. de C. Sowerby. Length 115 mm.

Scales with 5 basal radiating striae, 130 to 178 minute slender apical denticles, with 7 or 8 transverse series of slender basal elements; circuli very fine.

D. VIII I, 7, I, third spine 1 1/3 to 1 2/5 in head; sixth branched ray 1 3/4;
A. I, 6, I, first branched ray 2 1/4 to 2 2/3; caudal 1 1/10 to 1 1/8, deeply forked, slender lobes pointed; least depth of caudal peduncle 2 2/3 to 3 1/8; pectoral 1 1/3 to 1 2/5; ventral 1 2/5 to 1 1/2.

Generally brown, olivaceous tinge on back, paler below. Obsure dark lines on back, made up of dark line across each scale exposure, thus forming longitudinal lines. Six or 7 dark or dusky line across front of head and 2 parallel obliquely from eye to maxillary. Iris pale brown. Fins largely uniform brownish. Soft

U. S. N. M., No. 87063. China. A. de C. Sowerby. Length 65 to 97 mm. Six examples. All have forked caudals and edges of dorsal and anal broadly edged with dark or blackish gray.

U. S. N. M., No. 87064. Foochow. A. de C. Sowerby. Length 55 to 65 mm. Two examples.

Depth 3 1/3 to 3 2/5; head 3 to 3 1/5, width 2 1/4 to 2 2/5. Snout 1 7/8 to 2 in head; eye 4 1/3 to 4 7/8, 2 to 2 1/2 in snout, 1 to 1 1/5 in interorbital; maxillary reaches 3/4 to 4/5 to eye, expansion 1 3/4 to 2 in eye, length 3 to 3 1/10 in head; barbels 1 4/5 to 1 1/2, reach little behind hind opercle edge; teeth small, conic, irregularly biserial, at least in front of each jaw; also small patch on each palatine; interorbital 3 7/8 to 4 3/4, nearly level. Gill rakers 5 + 17, lanceolate, spinescent, 1 1/2 in gill filaments, which 1 1/3 in eye; 2 above and 3 below rudimentary.

Scales 28 in lateral line to caudal base and 2 or 3 more on latter; 2 above, 5 below, 9 predorsal forward opposite nostril, 3 or 4 rows on cheek with lowest row on preopercle flange border of which, moderately wide, naked.

A. H. V. P., eight examples.
Bombay. 1925. Prof. F. Hallberg.
Purchased. Length 60 to 122 mm.

A. H. V. P., one example.
Bombay. 1925. Prof. F. Hallberg.
Purchased. Length 157 mm.

A. H. V. P., three examples. Hong
Kong. April 1929. Henry W. Fowler.
Length 133 to 160 mm.

8 pt. Leaded

20749. Sebatic Island, Borneo. October 1, 1909. Length 211 mm.

18304 to 18307. River at Macassar, Celebes. December 26, 1909. Length 208 to 224 mm.

52985 A.N.S.P. off Bombay. Prof. F. Hallberg. 1923. Length 93 mm.

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Johnius argentatus (Houttuyn)

Sparus argentatus HOUTTUYN, Verh. Holland. Maatsch. Wet. Haarlem, vol. 20, 1782, p. 319, (Japan). (Not Sciaena argentata GMELIN 1789 which a Lutjanus.)

Corvina argentata VALENCIENNES Hist. Nat. Poiss., vol. 5, 1830, p. 115 (on HOUTTUYN).

Corvula argentata JORDAN and EVERMANN, Proc. U.S. Nat. Mus., vol. 25, 1903, p. 351 (Formosa). - SMITH and POPE, Proc. U.S. Nat. Mus., vol. 31, 1906, p. 478 (Kochi).

Sciaena argentata JORDAN and THOMPSON, Proc. U.S. Nat. Mus., vol. 39, 1911, p. 252 (copied). - IZUKA and MATSUURA, Cat. Zool. Spec. Tokyo Mus., Vertebr., 1920, p. 147 (Kii). - TANAKA, Fishes of Japan, vol. 44, Dec. 13, 1928, p. 870, pl. 180, fig. 491 (Tokyo).

Sciaena japonica SCHLEGEL, Fauna Japonica, Poiss. pts. 2-4, 1843, p. 58, pl. 24, fig. 1, (South west coast of Japan. - JORDAN and THOMPSON, Proc. U.S. Nat. Mus., vol. 39, 1911, p. 260 (copied). - JORDAN and METZ, Mem. Carnegie Mus., vol. 6, No. 1, June 1913, p. 35, pl. 7, fig. 1 (Chinnampo, Fusan, Seoul).

A. N. S. P., No. 59925. Bangkok, Siam. March 12, 1933. Length 120 mm. Type of Pampus sinoprosopus.

A. N. S. P., Nos. 59926 to 59927. Same data. Length 90 to 103 mm. Paratypes of Pampus sinoprosopus.